

ABSTRACT OF THE DISCLOSURE

The TGF- β family of growth factors, particularly the bone morphogenetic protein (BMP)-2/4 homolog decapentaplegic (*dpp*), are specifically required to maintain germline
5 stem cells and promote their division. Overexpression of *dpp* blocks germline stem cell differentiation. Mutations in *dpp* or its receptor *saxophone* accelerate stem cell loss and retard stem cell division. *dpp* signaling is directly received by germline stem cells, and thus *dpp* signaling helps define a niche that controls germline stem cell proliferation.